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Economics Revision Focus: 2004

A2 Economics

Price Discrimination

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Revision Focus on Price Discrimination

A2 Syllabus Requirements:

Candidates should understand the conditions necessary for price discrimination and be able to assess the advantages and disadvantages of such policies. Real world examples should be used to illustrate price discrimination.

What is Price Discrimination?

Price discrimination occurs when a firm charges a different price to different groups of consumers for an identical good or service, for reasons not associated with costs.

It is important to stress that charging different prices for similar goods is not pure price discrimination.

We must be careful to distinguish between price discrimination and product differentiation – differentiation of the product gives the supplier greater control over price and the potential to charge consumers a premium price because of actual or perceived differences in the quality / performance of a good or service

Conditions necessary for price discrimination to work

Essentially there are two main conditions required for discriminatory pricing

1. Differences in price elasticity of demand between markets:

There must be a different price elasticity of demand from each group of consumers. The firm is then able to charge a higher price to the group with a more price inelastic demand and a relatively lower price to the group with a more elastic demand. By adopting such a strategy, the firm can increase its total revenue and profits. To profit maximise, the firm will seek to set marginal revenue = to marginal cost in each separate (segmented) market.

2. Barriers to prevent consumers switching from one supplier to another

The firm must be able to prevent “market seepage” or “consumer switching” – defined as a process whereby consumers who have purchased a good or service at a lower price are able to resell it to those consumers who would have normally paid the expensive price.

This can be done in a number of ways, – and is probably easier with the provision of a unique service such as a haircut rather than with the exchange of tangible goods. Seepage might be prevented to selling at unique and different points in time.

Examples of price discrimination

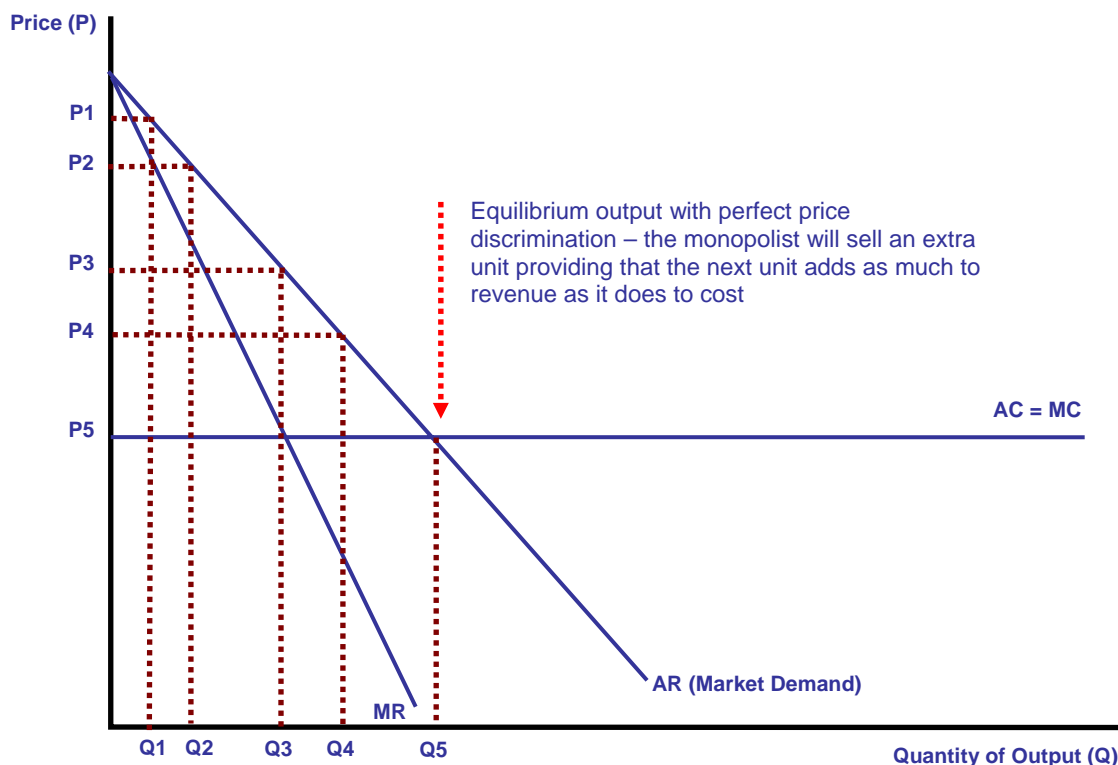
Price discrimination is an extremely common type of pricing strategy operated by virtually every business with some discretionary pricing power.

(a) Perfect Price Discrimination – charging whatever the market will bear

Sometimes known as optimal pricing, with perfect price discrimination, the firm separates the whole market into each individual consumer and charges them the price they are willing to pay. If successful, the firm can extract the consumer surplus beneath the demand curve and turn it into extra producer revenue (or producer surplus). This is impossible to achieve unless the firm knows every consumer's preferences and, as a result, is unlikely to occur in the real world. The transactions costs involved in finding out through market research what each buyer is prepared to pay is the main block to this form of price discrimination.

If the monopolist is able to perfectly segment the market, then the average revenue curve effectively becomes the marginal revenue curve for the firm. The monopolist will continue to see extra units as long as the extra revenue exceeds the marginal cost of production. The equilibrium output under perfect discrimination is Q5 where the 'marginal consumer' pays P5. This output is one that brings allocative efficiency, but the result is that all consumer surplus is extracted and turned into producer surplus (or extra monopoly profit).

Most suppliers and consumers prefer to work with price lists and price menus from which trade can take place rather than having to negotiate a price for each unit of a product bought and sold.



Second Degree Price Discrimination – quantity discounts or different prices for different versions

This type of price discrimination involves businesses selling off packages of a product deemed to be **surplus capacity** at lower prices than the previously published/advertised price.

Examples of this can often be found in the hotel and airline industries where spare rooms and seats are sold on a last minute standby basis. In these types of industry, the **fixed costs** of production are high. At the same time the **marginal or variable costs** are small and predictable. If there are unsold airline tickets or hotel rooms, it is often in the businesses best interest to **offload spare capacity** at a discount prices, always providing that the cheaper price that adds to revenue at least covers the marginal cost of each unit. There is nearly always some **supplementary profit** to be made from this strategy. And, it can also

be an effective way of securing **additional market share** within an oligopoly as the main suppliers' battle for market dominance.

The expansion of e-commerce by both well established businesses and new entrants to online retailing has seen a further growth in second degree price discrimination.

Early-bird discounts – extra cash-flow

The low cost airlines follow a different pricing strategy to the one outlined above. Customers booking early with carriers such as EasyJet will normally find lower prices if they are prepared to commit themselves to a flight by booking early. This gives the airline the advantage of knowing how full their flights are likely to be and a source of cash-flow in the weeks and months prior to the service being provided. Closer to the date and time of the scheduled service, the price rises, on the simple justification that consumer's demand for a flight becomes more inelastic the nearer to the time of the service.

Peak and Off-Peak Pricing

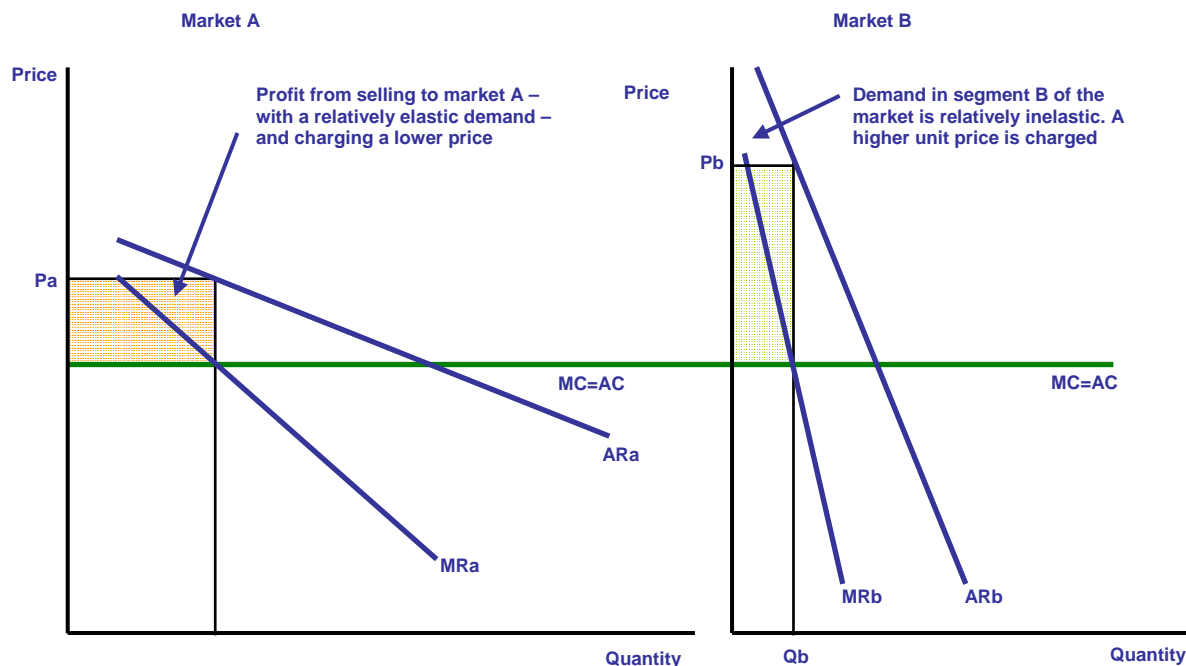
Peak and off-peak pricing and is common in the telecommunications industry, leisure retailing and in the travel sector. Telephone and electricity companies separate markets by time: There are three rates for telephone calls: a daytime peak rate, and an off peak evening rate and a cheaper weekend rate. Electricity suppliers also offer cheaper off-peak electricity during the night.

At **off-peak times**, there is **plenty of spare capacity** and marginal costs of production are low (the supply curve is elastic) whereas at **peak times** when demand is high, we expect that short run supply becomes relatively inelastic as the supplier reaches **capacity constraints**. A combination of higher demand and rising costs forces up the profit maximising price.

Third Degree (Multi-Market) Price Discrimination

This is the most frequently found form of price discrimination and involves charging different prices for the same product in **different segments of the market**. The key is that third degree discrimination is linked directly to **consumers' willingness and ability to pay** for a good or service. It means that the prices charged may bear little or no relation to the cost of production.

The market is usually separated in two ways: by **time** or by **geography**. For example, exporters may charge a higher price in overseas markets if demand is estimated to be more inelastic than it is in home markets.



Suppose that a firm has separated a market by time into a peak market with inelastic demand, and an off-peak market with elastic demand. The demand and marginal revenue curves for the peak market and off-peak markets are labelled A and B respectively. This is illustrated in the diagram above. Assuming a constant marginal cost for supplying to each group of consumers, the firm aims to charge a profit maximising price to each group.

In the peak market the firm will produce where $MR_b = MC$ and charge price P_b , and in the off-peak market the firm will produce where $MR_a = MC$ and charge price P_a . Consumers with an inelastic demand for the product will pay a higher price (P_b) than those with an elastic demand who will be charged P_a .

The internet and price discrimination

A number of recent research papers have argued that the rapid expansion of e-commerce using the internet is giving manufacturers unprecedented opportunities to experiment with different forms of price discrimination. Consumers on the net often provide suppliers with a huge amount of information about themselves and their buying habits that then give sellers scope for discriminatory pricing.

For example Dell Computer charges different prices for the same computer on its web pages, depending on whether the buyer is a state or local government, or a small business.

Two Part Pricing Tariffs

Another pricing policy common to industries with pricing power is to set a two-part tariff for consumers. A **fixed fee** is charged (often with the justification of it contributing to the fixed costs of supply) and then a **supplementary "variable" charge** based on the number of units consumed. There are plenty of examples of this including taxi fares, amusement park entrance charges and the fixed charges set by the utilities (gas, water and electricity). Price discrimination can come from varying the fixed charge to different segments of the market and in varying the charges on marginal units consumed (e.g. discrimination by time).

Product-line pricing

Product line pricing is also becoming an increasingly common feature of many markets, particularly manufactured products where there are many closely connected complementary products that consumers may be enticed to buy.

It is frequently observed that a producer may manufacture many related products. They may choose to charge one low price for the core product (accepting a lower mark-up or profit on cost) as a means of attracting customers to the components / accessories that have a much higher mark-up or profit margin.

Good examples include manufacturers of cars, cameras, razors and games consoles. Indeed discriminatory pricing techniques may take the form of offering the core product as a “loss-leader” (i.e. priced below average cost) to induce consumers to then buy the complementary products once they have been “captured”. Consider the cost of computer games consoles or Mach3 Razors contrasted with the prices of the games software and the replacement blades!

The Consequences of Price Discrimination - Welfare and Efficiency Arguments

To what extent does price discrimination help to achieve a more efficient allocation of resources? There are arguments on both sides of the coin – indeed the impact of price discrimination on welfare seems bound to be ambiguous.

The impact on consumer welfare

Consumer surplus is reduced in most cases - representing a **loss of consumer welfare**. For the majority of consumers, the price charged is significantly above marginal cost of production. Those consumers in segments of the market where demand is inelastic would probably prefer a return to uniform pricing by firms with monopoly power! Their welfare is reduced and monopoly pricing power is being exploited.

However some consumers who can buy the product at a lower price may benefit. Previously they may have been excluded from consuming it. Low-income consumers may be “priced into the market” if the supplier is willing and able to charge them a lower price. Good examples to use here might include legal and medical services where charges are dependent on income levels. Greater access to these services may yield **external benefits** (positive externalities) which then have implications for the overall level of **social welfare** and the **equity** with which scarce resources are allocated.

Producer surplus and the use of profit

Price discrimination is clearly in the interests of businesses who achieve higher profits. A discriminating monopoly is **extracting consumer surplus** and turning it into **extra supernormal profit**. Of course businesses may not be driven solely by the aim of maximising profit. A company will **maximise its revenues** if it can extract from each customer the maximum amount that person is willing to pay.

Price discrimination also might be used as a **predatory pricing tactic** - setting prices below cost to certain customers - to harm competition at the supplier's level and thereby increase a firm's market power. This type of **anti-competitive practice** is difficult to prove, but would certainly come under the scrutiny of the UK and European Union competition authorities.

A converse argument to this is that price discrimination may be a way of making a market more **contestable** in the long run. The low cost airlines have been hugely successful partly on the back of extensive use of price discrimination among consumers.

The profits made in one market may allow firms to **cross-subsidise loss-making activities/services** that have important social benefits. For example profits made on commuter rail or bus services may allow transport companies to support loss making rural or night-time services. Without the ability to price discriminate these services may have to be withdrawn and employment might suffer. In many cases, aggressive price discrimination is seen as inimical to business survival during a recession or sudden market downturn.

The premium prices paid by business purchases of software licences might allow a software company to offer educational users a lower-price for similar or identical products.

An increase in total output resulting from selling extra units at a lower price might help a monopoly supplier to exploit **economies of scale** thereby reducing long run average costs.

For the exam:

- Make sure you are clear about the main conditions required for price discrimination
- Have plenty of good real world examples to draw on
- Be aware that there are quite extensive economic arguments for and against price discrimination
- Use theory of the firm diagrams to develop an analysis of price discrimination
- Avoid simply supply and demand diagrams – cost and revenue curves are essential
- Link price discrimination arguments to economic efficiency and welfare arguments